AMENDMENTS TO THE DRAWINGS

The attached sheet(s) of drawings includes changes to Figures 3 and 4 that correct the margins and the numbering of the sheets.

Attachment: Replacement sheets

REMARKS

Rejections under 35 U.S.C. § 112

We have addressed the rejection by amending claim 12 to depend on claim 10.

Rejections under 35 U.S.C. § 102

The examiner rejected claim 8 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,99,639 to Kado (Kado). Claim 8 requires "adjusting a pose of the three dimensional facial image." The examiner reiterates the assertion he made in the non-final Office action dated June 13, 2007, that Kado discloses brightness correction, and that correcting brightness is the same as adjusting pose. We believe that the examiner is ascribing an inappropriate meaning to the word "pose," and that under the correct definition of the term, correcting brightness is not pose adjustment.

The examiner uses a definition of "pose" from Merriam-Webster Online as "an attitude, role, or characteristic assumed for effect." But that is not the appropriate definition. In the field of computer graphics and 3D modeling, the word "pose" has another generally accepted meaning as described, for example, in the following standard text:

> Position and orientation (or pose) refer to the 3-D translation and rotation, respectively, which bring the object model wherever it was observed by the sensor. (Introductory Techniques for 3-D Computer Vision by E. Trucco and A. Verri, Prentice Hall, 1998, page 280, emphasis added; copy of cover pages and page 280 are attached)

A similar definition appears in Wikipedia:

> In computer vision and in robotics, a typical task is to identify specific objects in an image and to determine each object's position and orientation relative to some coordinate system. ... The combination of position and orientation is referred to as the pose of an object, even though this concept is sometimes used only to describe the orientation. Exterior orientation is also used as a synonym to pose.
> ...
> The objects which are considered can be rather general, including a living being or parts of a living being, e.g., a head or hands.

(http://en.wikipedia.org/wiki/Pose_%28computer_vision%29, emphasis added)

Since the instant application is concerned with the field of computer graphics and 3D modeling, these definitions are the appropriate ones to use. Indeed, the specification only uses the word "pose" in a manner that is consistent with definitions we have given above. For example, the specification says:

> Fig. 5 illustrates the process for correcting pose. ... In the original image 120, the subject is not necessarily looking at the camera. An objective of the facial recognition system of the present invention is to determine the direction of the face and to adjust it to create an artificial image in which the user is looking at the camera. ... A database of facial images with different poses (with different angles of rotation in multiple directions) is collected. (page 12, lines 6-14, emphasis added)
>
> After a shape has been determined, the shape can be used to correct pose 122. The pose of a three dimensional face is changed so that the subject is looking at the camera. (page 13, lines 15-17)

Nowhere have we used "pose" in a way that is consistent with the examiner's definition. Indeed, using the examiner's definition of pose would imply that the described geometrical operations, such as rotating a head into a face-on position with respect to a camera, would change "an attitude, role, or characteristic assumed for effect." But the specification says nothing about adjusting facial attitude, role, or characteristic assumed for effect. Rather, it describes adjustments that change the orientation of a head with respect to the camera's viewpoint, which is in accordance with the definitions of "pose" that we have given above. Nor has the examiner pointed to anything in the specification that supports his definition, or that would even permit a coherent interpretation of the specification under his definition.

Using the correct definition of "pose," it becomes clear that Kado's brightness correction is not the same as adjusting a pose. We pointed out the difference in our Amendment dated December 12, 2007. To summarize, under the correct definition, pose adjustment requires changing the orientation of a three dimensional facial image. But Kado's brightness correction does not involve any change in the geometrical relationship between his fixed three dimensional model and his two dimensional image. Instead, Kado is concerned with determining the position of a light source

illuminating a face seen in a two-dimensional image, and then correcting the illumination to make it correspond more closely to a standard illumination. The illumination is corrected by adjusting the brightness of patches in the model based on the angle of the patch's surface normal. This correction requires no changes in the surface normals of Kado's face model patches, i.e., no rotation or change of position of his three dimensional model is performed. Thus there is nothing in Kado that that even hints at adjustment of pose, as required by the claim.

In view of the above, Applicants believe that claim 8 is not anticipated by Kado. Independent claims 1, 13, and 19 each contain limitations that are analogous to those of claim 8. Therefore Applicants believe that claims 1, 13, and 19, and dependent claims 3-5, 7, 9, 10, 12-15, 17, 18, and 20 are not anticipated or rendered obvious by Kado.

In view of the above, Applicants believe the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 08-0219, under Order No. 0291359.00126US2 from which the undersigned is authorized to draw.

Respectfully submitted,

Dated: May 5, 2008

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Attachments:
Replacement Drawings
Definitions